



Future arts: By and for whom, and for what?

by T. Machover

A bit over 30 years ago, pianist Glenn Gould wrote a visionary article entitled “The Art of Recording” (*High Fidelity*, April 1966) in which he predicted that the live performance of music would disappear and be replaced by the wonders of studio recording. He went far beyond this, stating that “elevator music”—already a fairly pervasive irritant at the time—could become a revolutionary force in arts and expression, turning from a soporific into a stimulant, subliminally teaching people the essential listening and creative skills of music, and elevating—as it were—music to replace language as a universal form of emotional communication.

It is amazing how much of Gould’s vision has come true, accelerated and transformed even further by digital technologies that Gould could not have anticipated. The arts are more present than ever before, with background music blaring wherever we go, television flickering before the family hearth, and ubiquitous images telling immediate stories through print, billboards, and the Web.

But Gould would have been deeply disappointed with the casual use we make of the arts, seemingly devalued, with easy entertainment replacing serious expression. We seem to want the arts around us all the time, but do not seem to want to let them under our skin. Although great strides have been made in allowing audiences to participate “interactively” in artistic experiences (some of the best work is described in this special issue), much remains to be done to bring the public beyond surface titillation and to truly teach the magic of creative expression. We must go much further if the digital arts are to expand our minds, help make us more alive, and allow us to explore and communicate our deepest beliefs and values.

A century ago, art making was cherished as inherently wholesome, as morally empowering. To Theodore Thomas, the itinerant conductor who fathered the American orchestra, symphonic concerts were “sermons in tones.” And Albert Einstein described the joyful, inspiring, exhilarating, and liberating activity of music listening and performing by remarking that “the most beautiful experience we can have is the most mysterious.” Art forms are not only among the most beautiful and mysterious human experiences of all, but they are born from science and nurtured by engineering.

Technology is necessary to fuel art forms, and art is vital to elevate the aspirations of technologists. The history of art and science is intertwined in a kind of eternal ballet, and the two have always progressed in concert: from the organs on which Bach played (the most sophisticated technology of his time) to the astonishing 20th century innovations that have led to cinema, television, photography, and MP3 technology.

Digital technology in particular offers the key to a true renaissance in the arts. Having access to the content of each artistic medium in digital form allows all to be analyzed, understood, and integrated with unprecedented power (demonstrated in various papers in this special issue, as well as in some of the MIT Media Lab’s recent projects such as the Brain Opera, permanently installed in Vienna as of June 2000). Measurement of expressive gesture enhances the most virtuosic performance while opening doors to amateurs with no special technical skills (demonstrated here in the papers on media in performance

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and expressive footwear, as well as in our Hyperinstruments work, seen at www.media.mit.edu/hyperins). As new technology has allowed computation to leave desktop boxes and re-enter the physical world, so will the arts become pervasive in our environment, responding to our moods and movements (as shown in the papers by Pinhanez et al., Davenport et al., Schmandt et al., Bove et al., and Bender et al., as well as in our Meteorite underground museum). And the Internet will allow huge choruses of collective sound to resonate around the world, while facilitating creative mentoring of master artist to child (as in our current Toy Symphony project).

Most importantly, as digital technology races ever further ahead of our knowledge of what to do with it, it becomes ever more important that creative visionaries seize the opportunity to use this technology for the highest possible purposes, and for the betterment of all. The MIT Media Lab has always been a unique environment for developing new technologies for creative and artistic expression. In fact, an extraordinary number of purely technical innovations at the lab have been motivated by a desire to solve artistic problems, or simply to express something of human importance.

But the time has come to go further, to concentrate more fully on the quality and content of artistic expression through technological means. We must increase the active involvement of the general public in creative expression, but not at the expense of subtlety and seriousness. We must increase the personalization of our media by making our tools more specific and individual, not more generic and bland. And we must encourage collaboration between our most gifted artists and the rest of us, raising the creative level of all, not descending to a common mediocrity.

We can only do this by making bold steps to create new centers for real excellence in artistic invention with new technological means, to stimulate large-scale, innovative developments that will embrace artistic and technical forces and that will bring into the world a healthy, vibrant new character. No investment in human capital is more pleasurable, more deeply rewarding or fulfilling, more nourishing for mind and spirit, more stimulating or uplifting for every aspect of progress in the useful arts, than the nurturing, creative investment in the joyful arts.

With these higher goals in mind, we can ask how our lives will change when music lovers can personalize a Bernstein performance of Beethoven. When the production values of cinema and CDs can be translated into theater and opera. When graphic designs come alive in vivid choreography. When home theater provides interactive accompaniment to daily life. When portraits sense the actions of their viewers. When elevator music really becomes enriching and invigorating. When toys enable children to create vast symphonies together across the globe. When visionary cities are designed for the cyber-metropolis. When the sounds and images and smells and stories around you can be blended into personal sagas, as rich and rewarding as epics of old, as up-to-date as the latest net-news.

Now is the time to create these new forms and experiences and to build a world whose artistic capacities and inventions will be interconnected and amplified beyond our wildest dreams.

Tod Machover *MIT Media Laboratory, 20 Ames Street, Cambridge, Massachusetts 02139-4307 (electronic mail: tod@media.mit.edu).* Mr. Machover is Professor of Music and Media at the MIT Media Lab, where he is also Director of the Vilar Center for Future Arts. In addition, he is a founding member of MediaLabEurope in Dublin, Ireland. His Hyperinstruments Group explores new technologies for expression and creativity, designed for virtuosic performers as well as for amateur music lovers and children. He is also a composer, and his works include the science fiction opera *Valis*, *Begin Again Again . . .* for cellist Yo-Yo Ma, and the interactive *Brain Opera*. Mr. Machover received his degrees in musical composition from The Juilliard School and was Director of Musical Research at Pierre Boulez's IRCAM Institute, the musical division of the Pompidou Center in Paris.